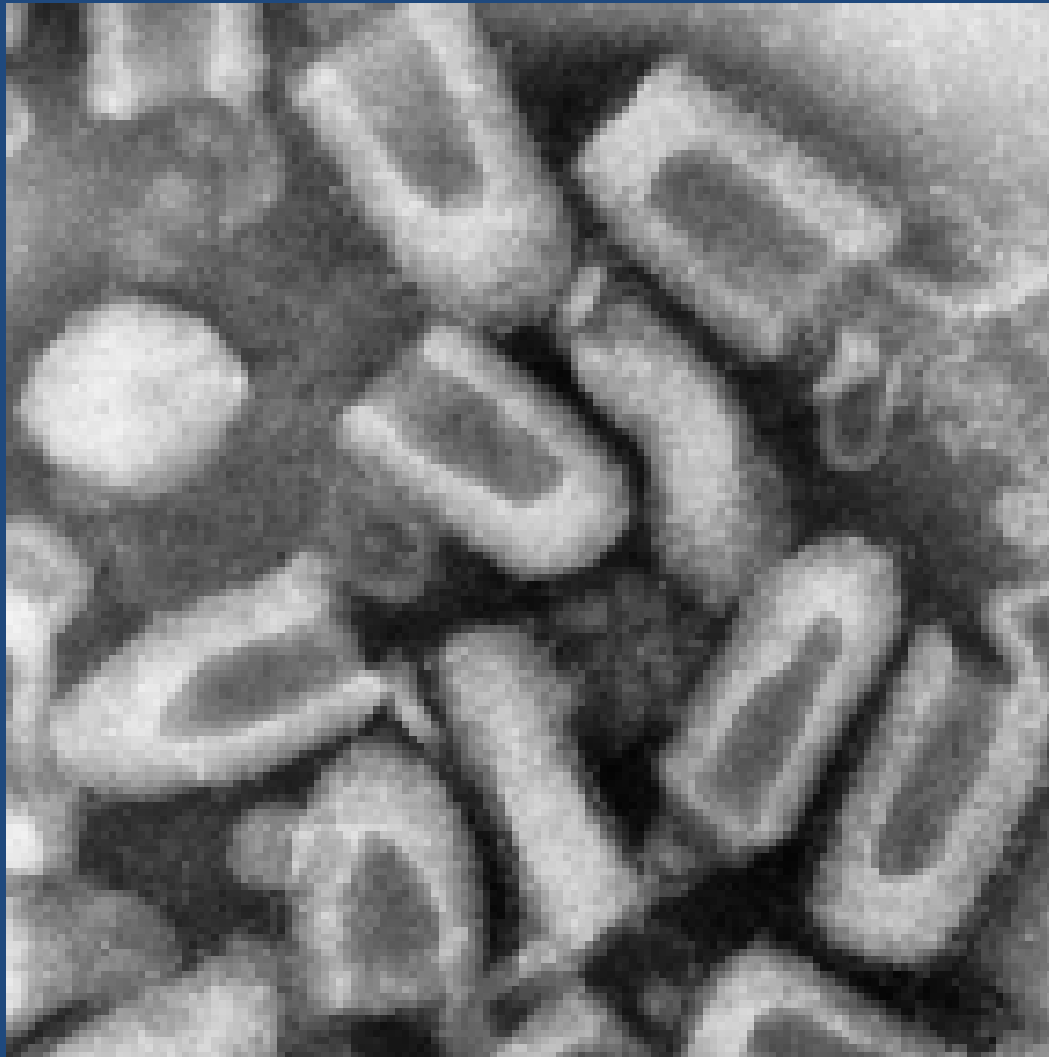


Animal Bites and Rabies Control for Indiana

Jennifer House, DVM, MPH, ACVPM
Veterinary Epidemiologist



Rabies Virus





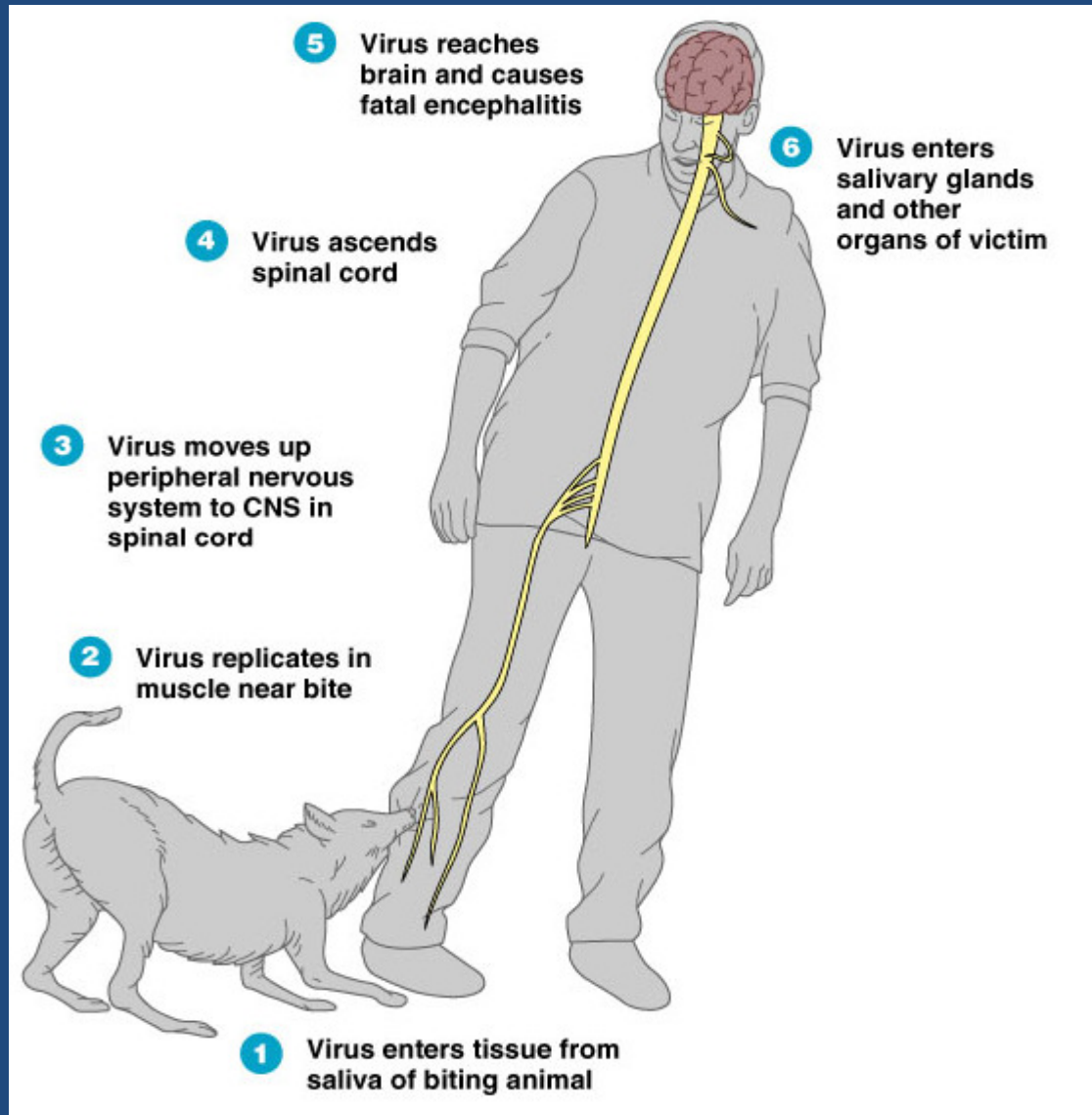
Courtesy of Dr. M. F. Aubert, France





Rabies

- Transmission
 - Bite wounds that break skin
 - Virus infected saliva contaminating scratches or mucous membranes
 - 0.1% develop rabies
 - Medical procedures
 - Transplants from infected donors

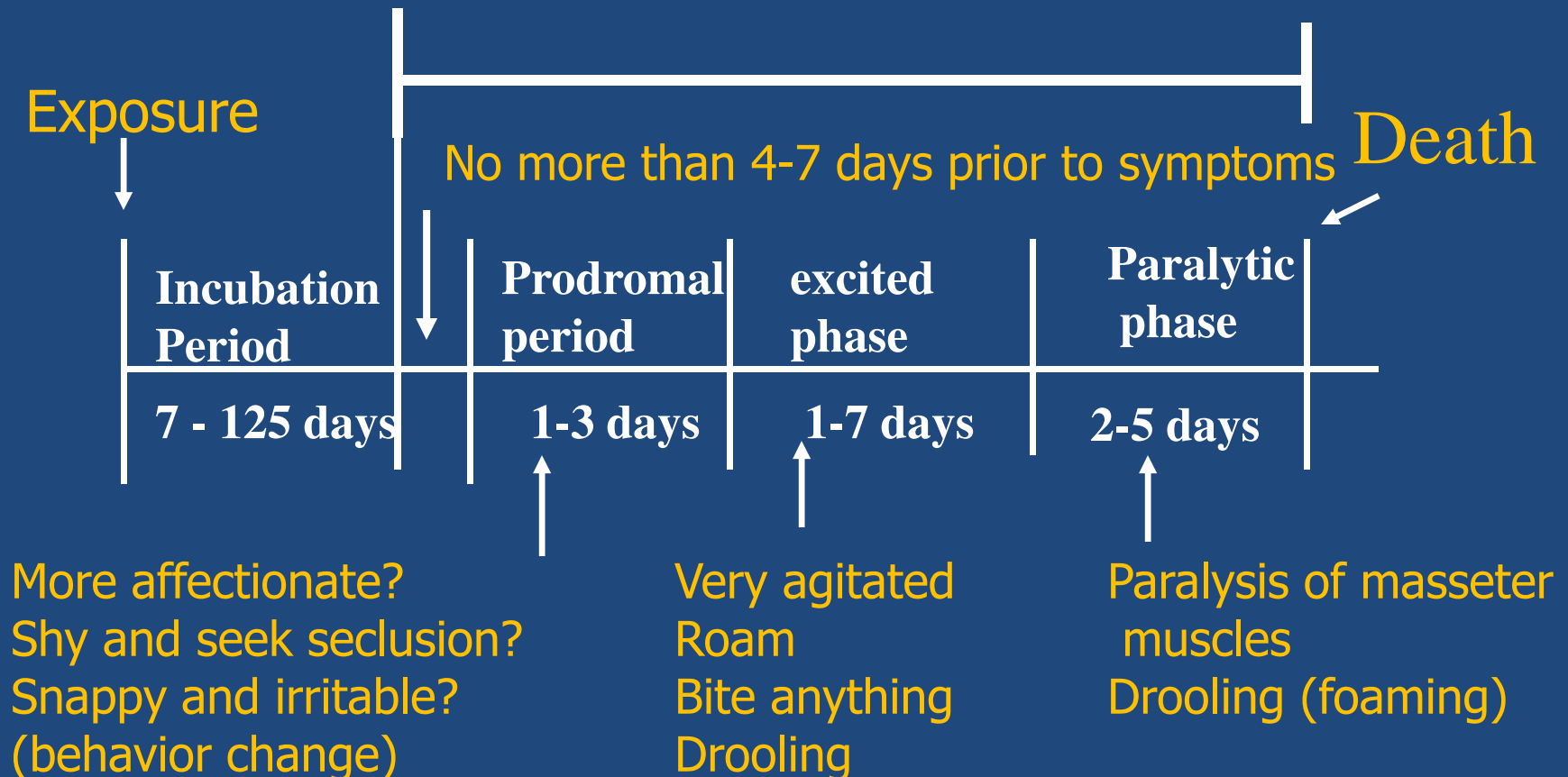


Incubation Period

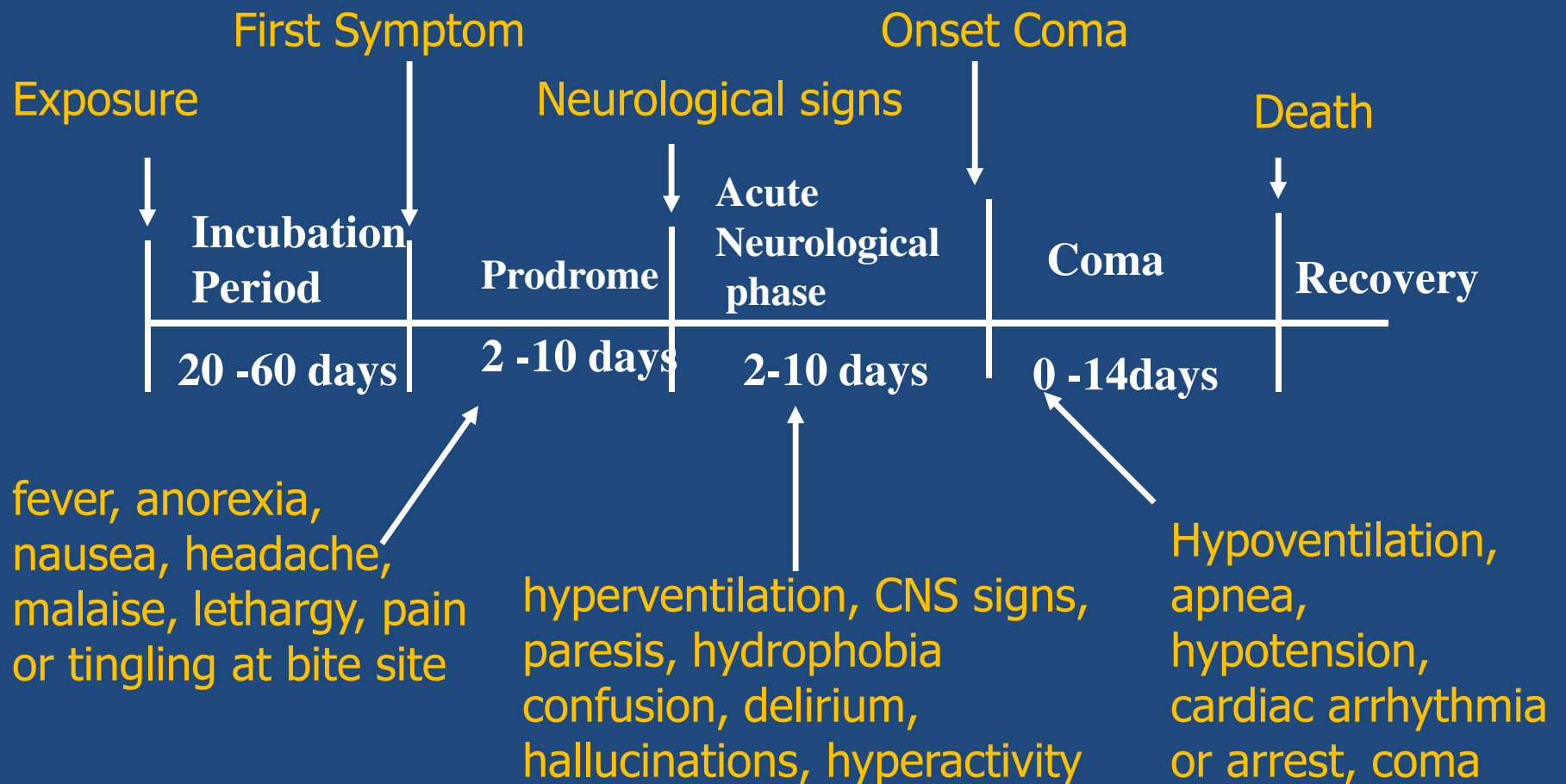
- Normal is 3-12 weeks (humans)
- Range may be 9 days to 7 years
- ***Long incubation period allows time to wait for treatment in certain situations

Rabies In Dogs

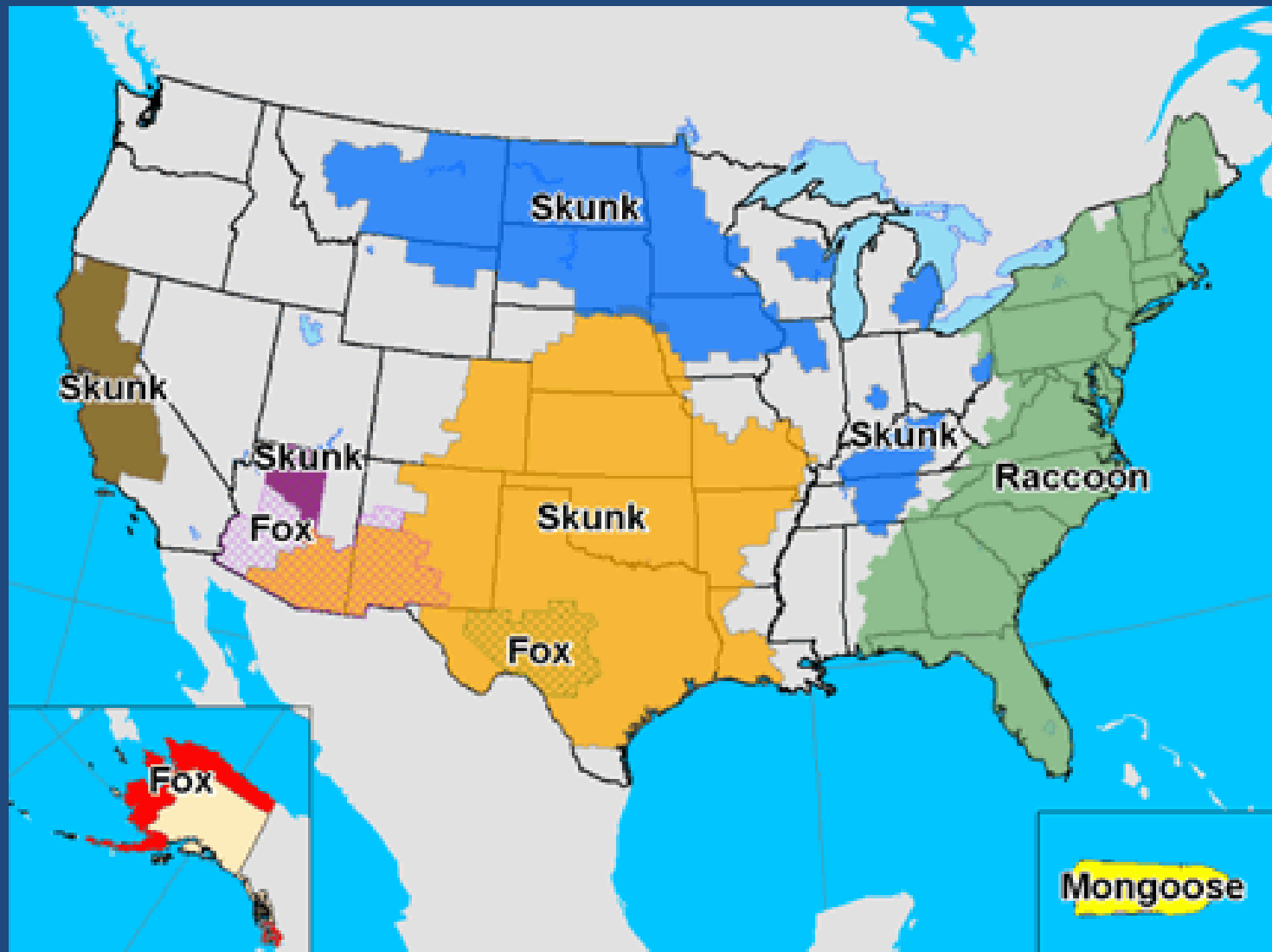
Dogs shed rabies virus during this time

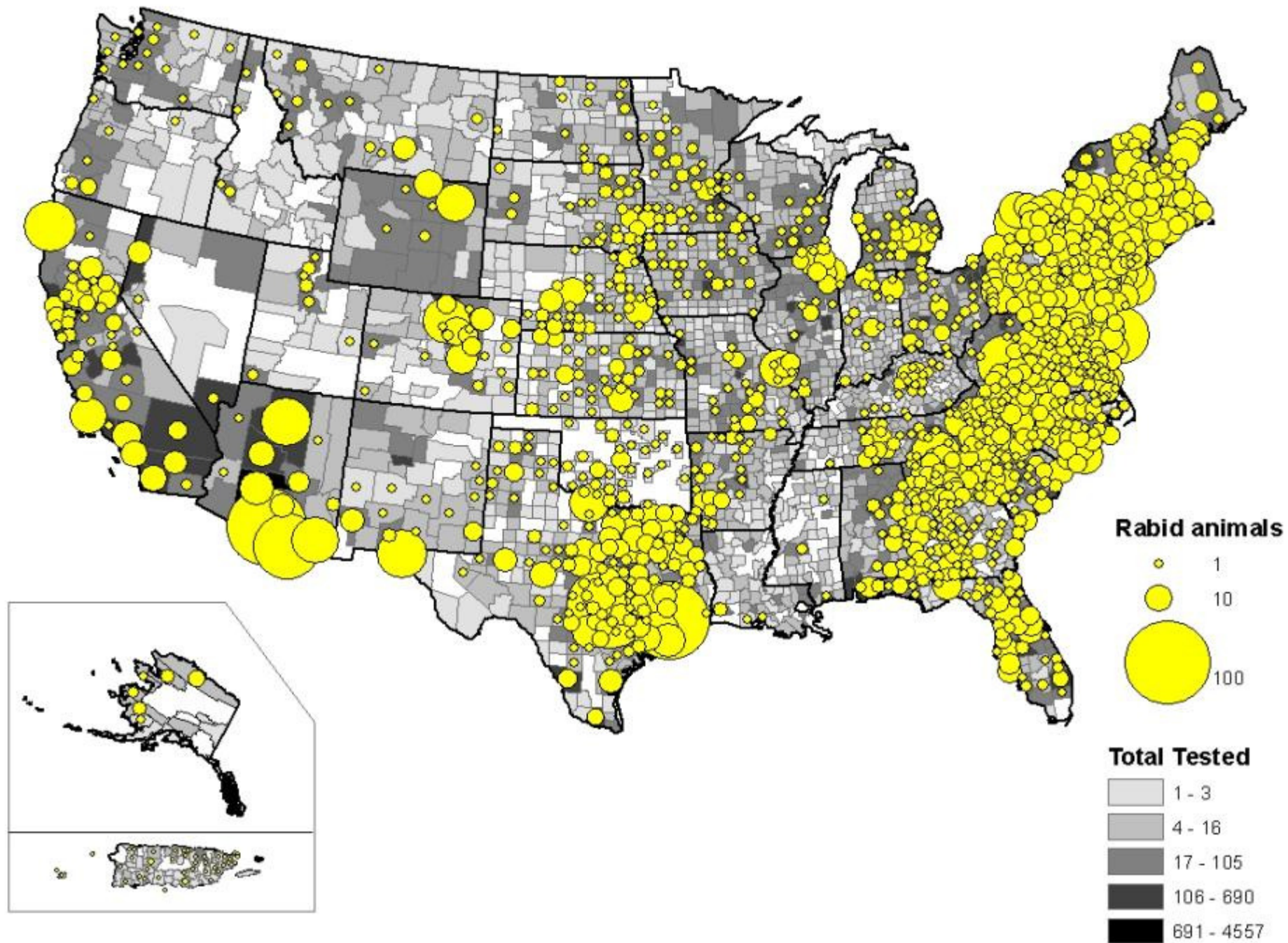


Rabies in Humans

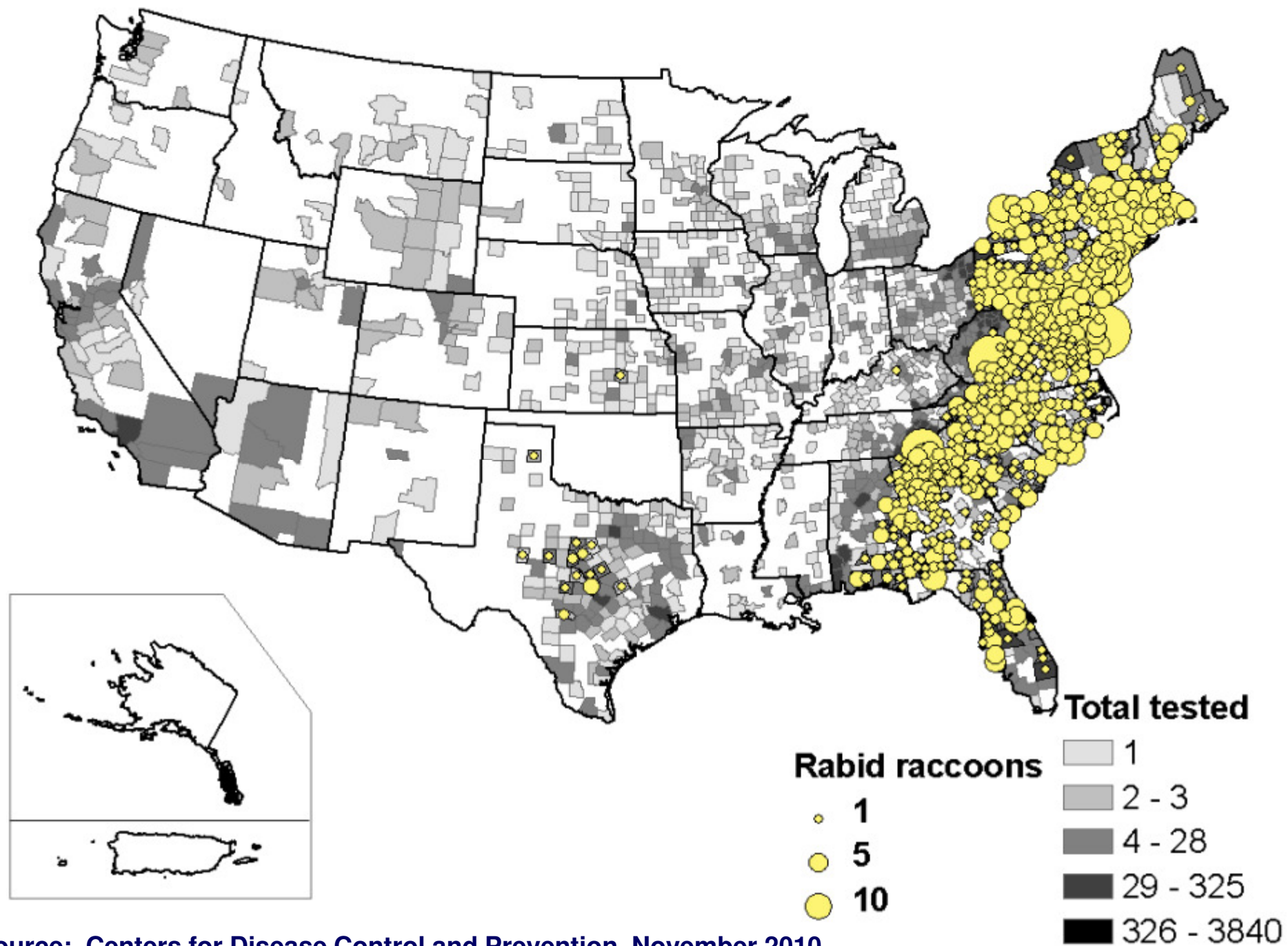


Rabies Virus Variants - 2009

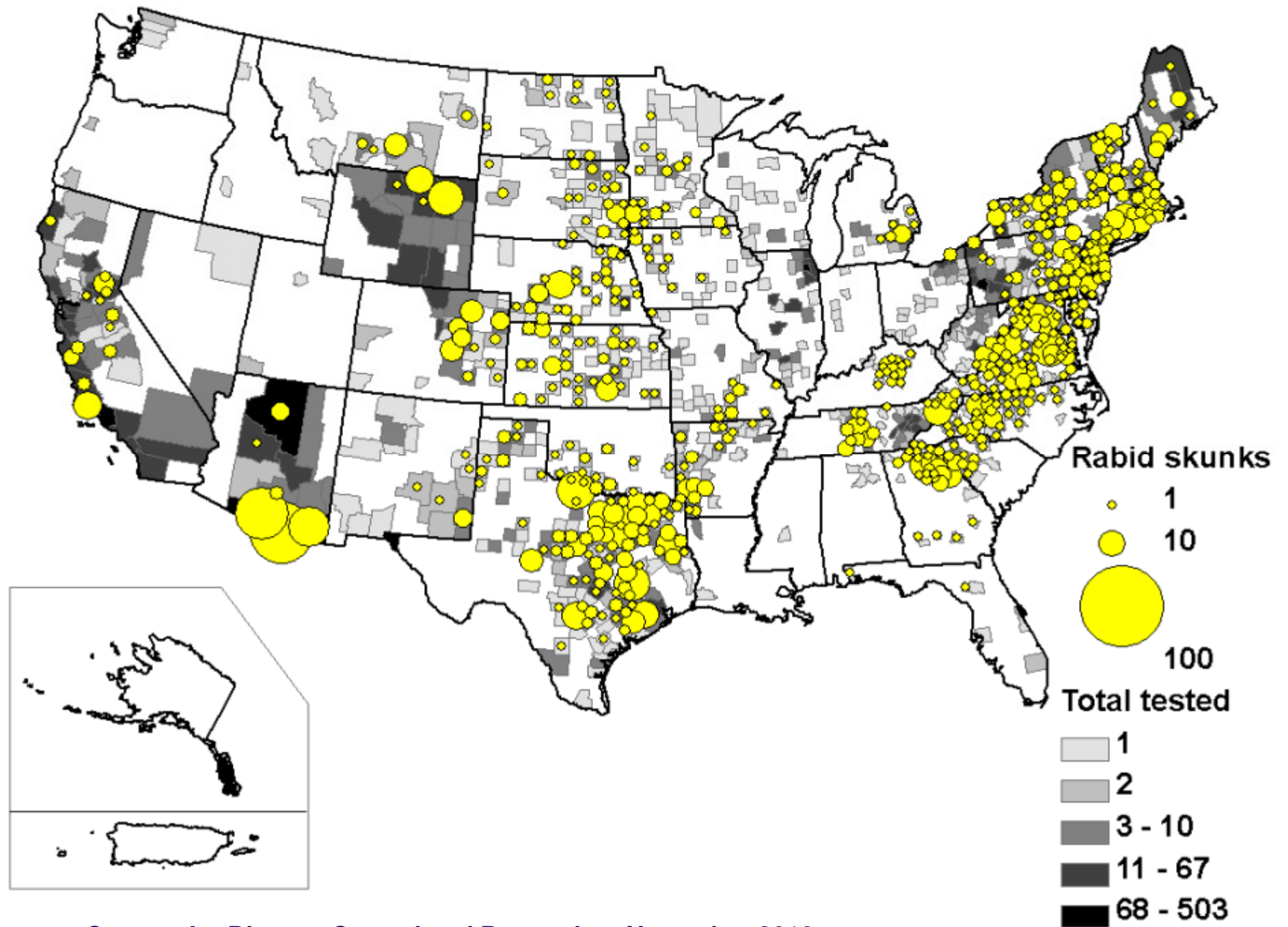




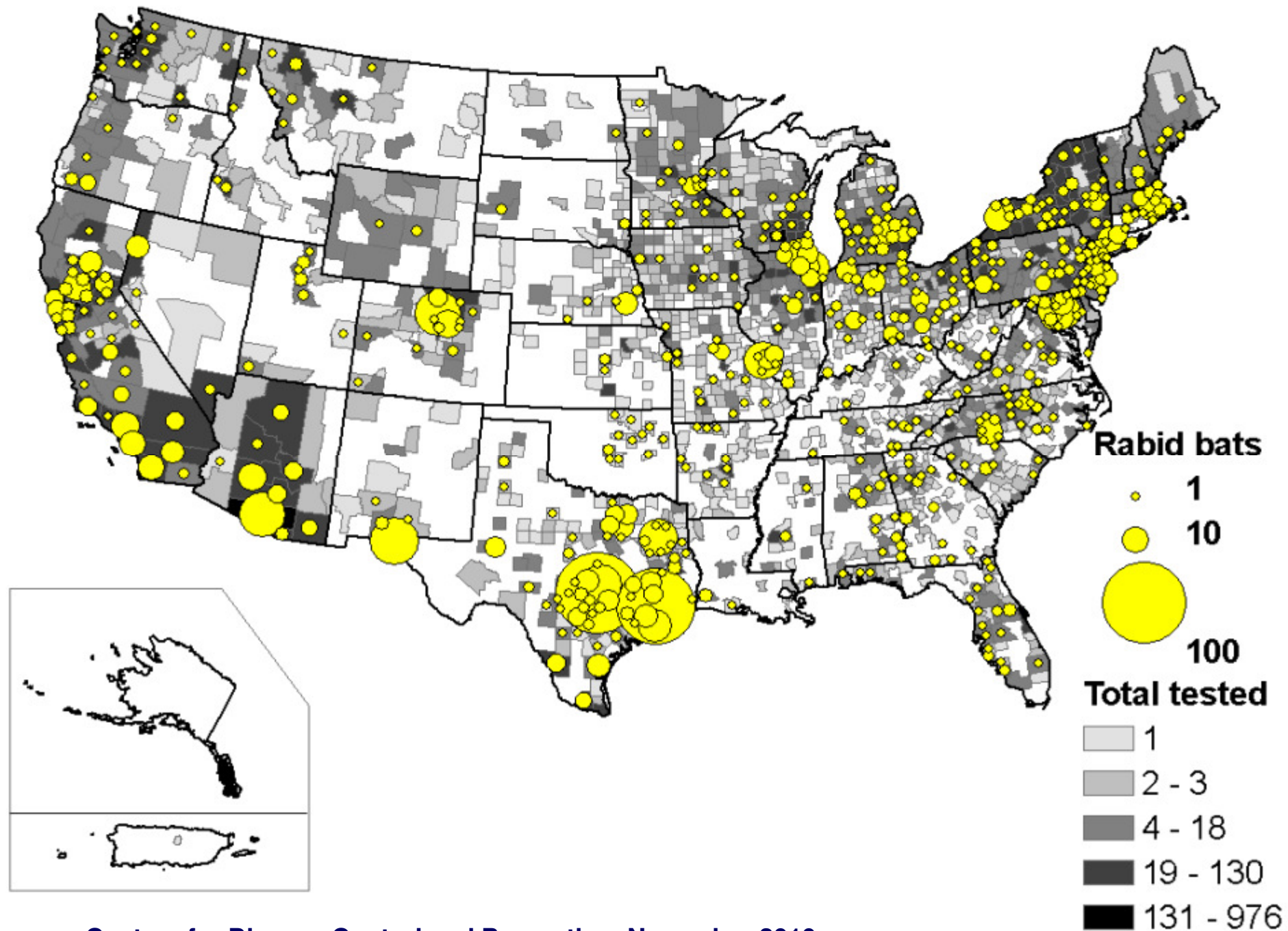
Source: Centers for Disease Control and Prevention, November 2010



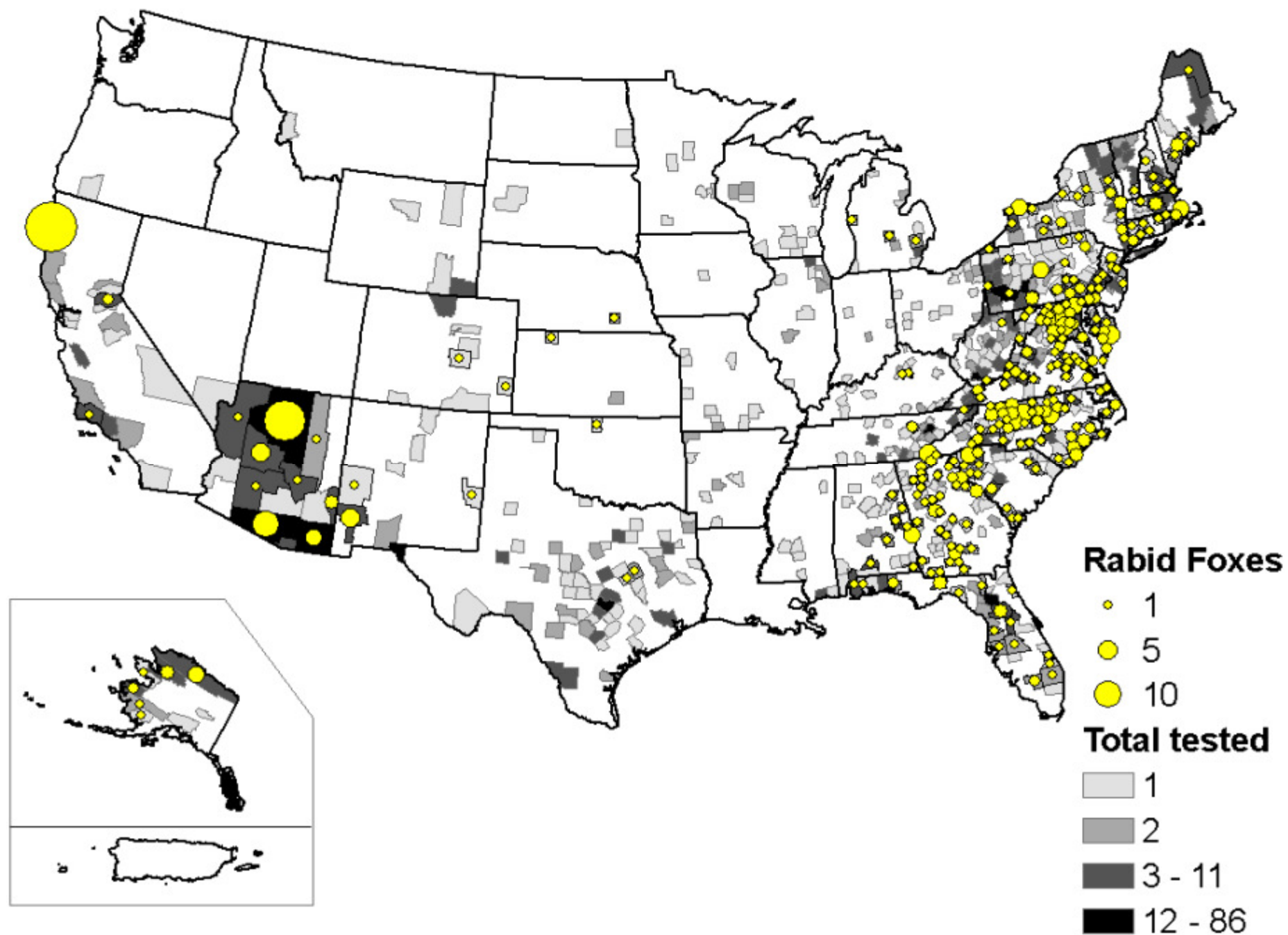
Source: Centers for Disease Control and Prevention, November 2010



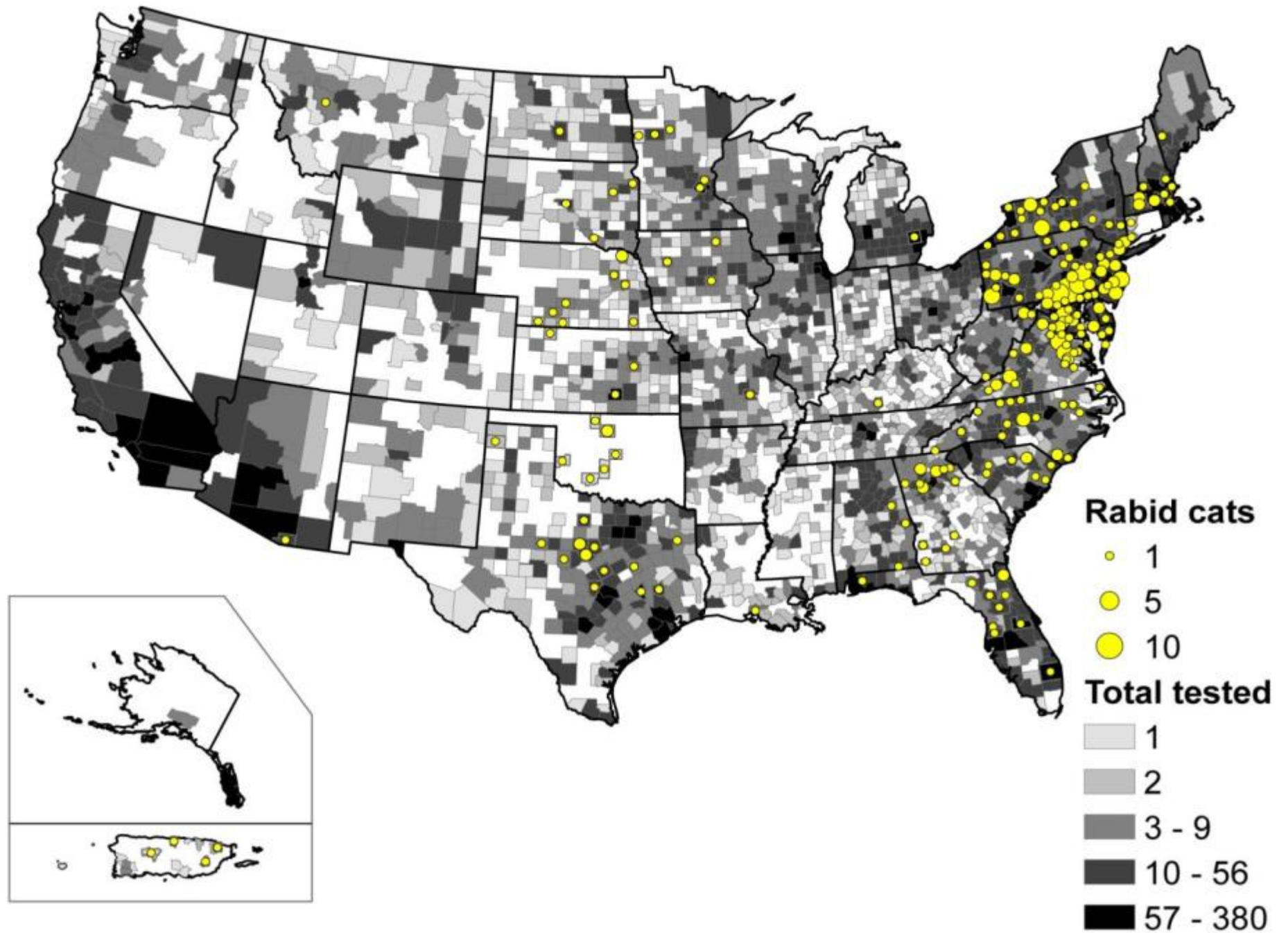
Source: Centers for Disease Control and Prevention, November 2010



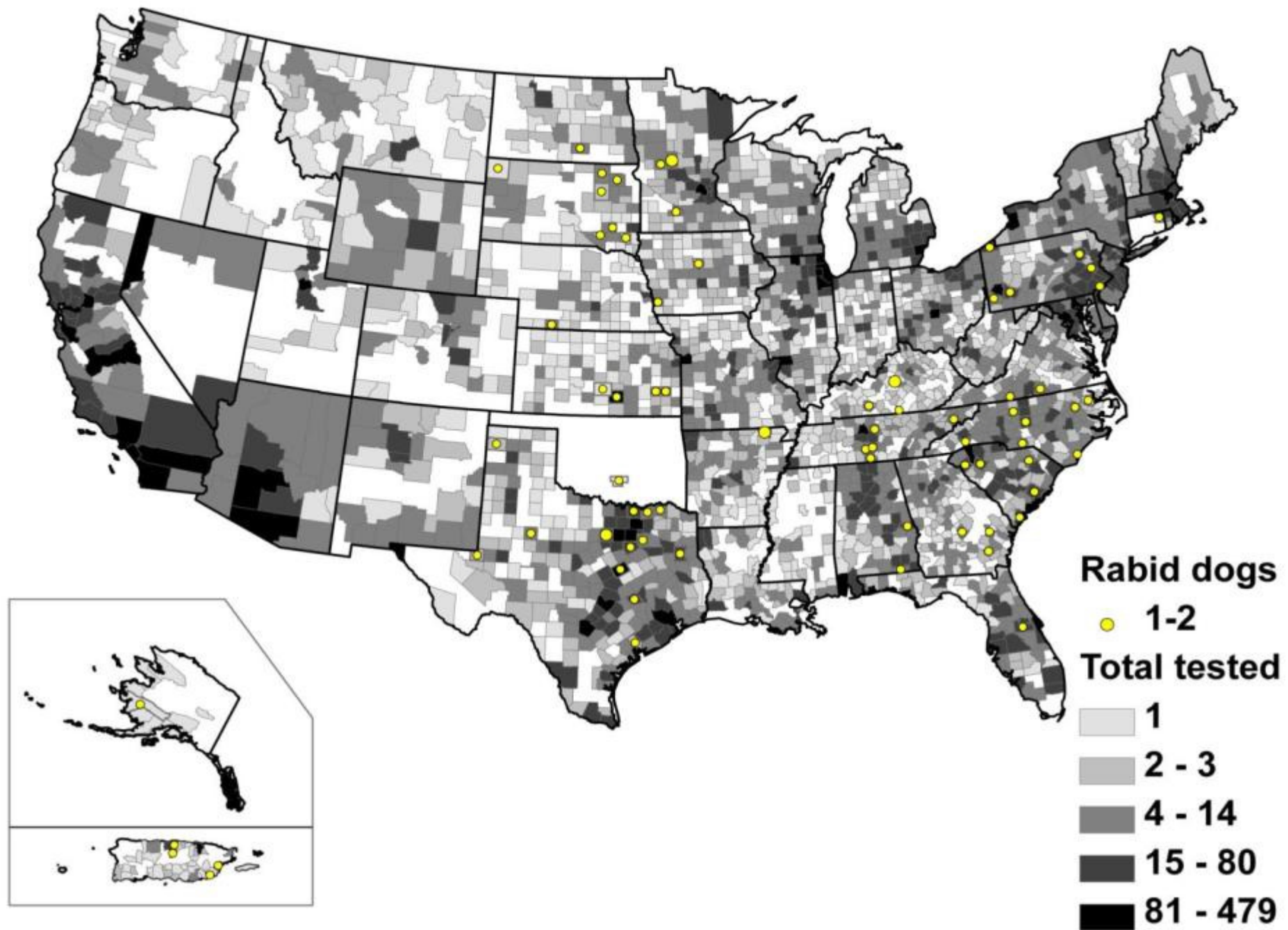
Source: Centers for Disease Control and Prevention, November 2010



Source: Centers for Disease Control and Prevention, November 2010



Source: Centers for Disease Control and Prevention, November 2010



Source: Centers for Disease Control and Prevention, November 2010

Summary Of Human Rabies Since 1990, US

- BATS!
- In-apparent bites?
- Not recognizing bite or not reporting
- Rabies is not always suspected by medical personnel when clinical signs develop

Recent Human Cases in the US

- 45 Cases in United States (1995-2010)
 - 34 bat variant
 - 4 organ/tissue transplantations
 - 8 canine variant (foreign origin)
 - 3 other variants
 - Raccoon
 - Mongoose
 - Fox



Incidence in Animals (IN)

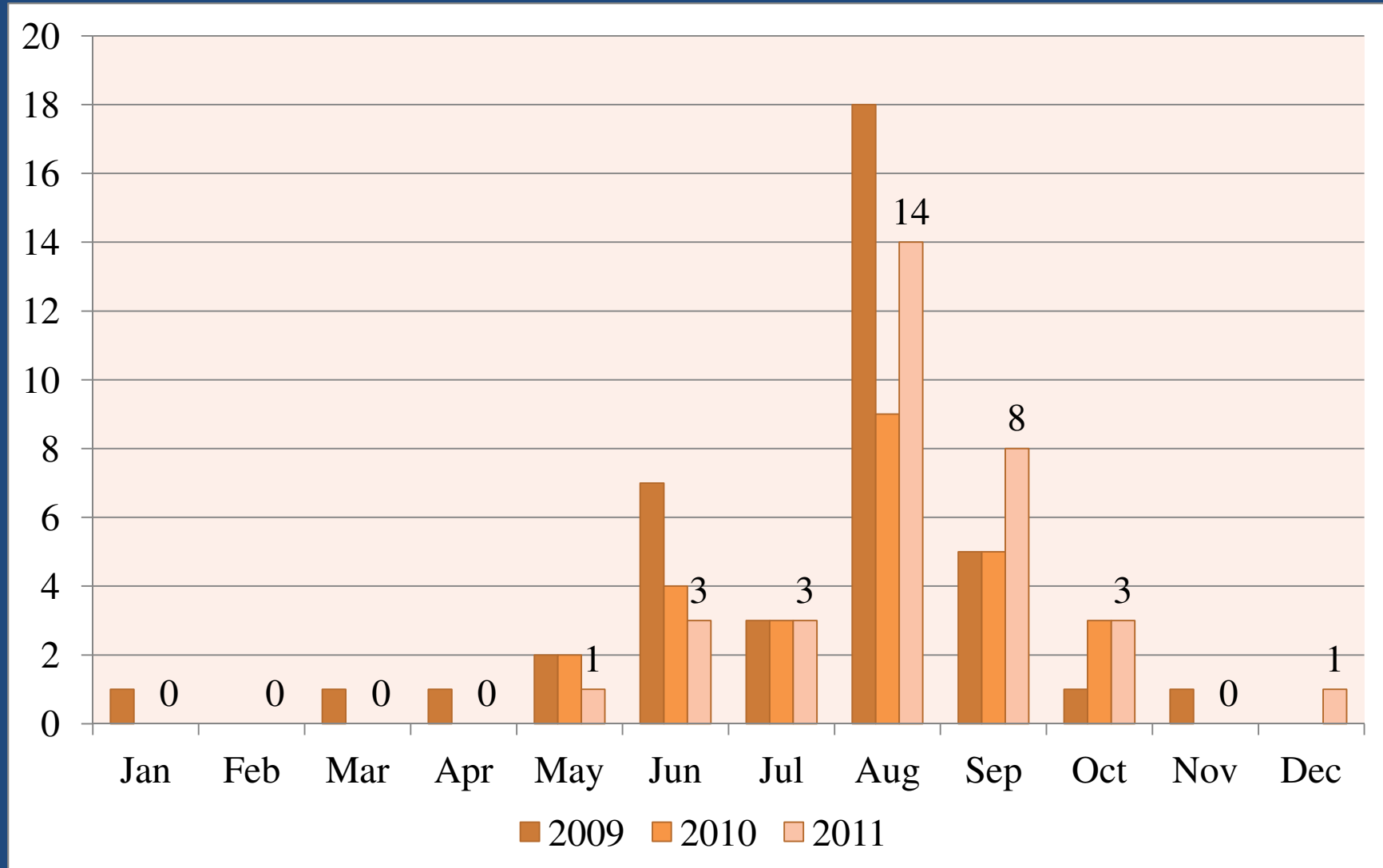
- Bat variant is endemic
 - 24 positive bats in 2010
- Skunk variant occasionally (2004)
- Other variants are not currently present, but may be introduced at anytime
 - How?



Rabies, Indiana 2000 - 2010

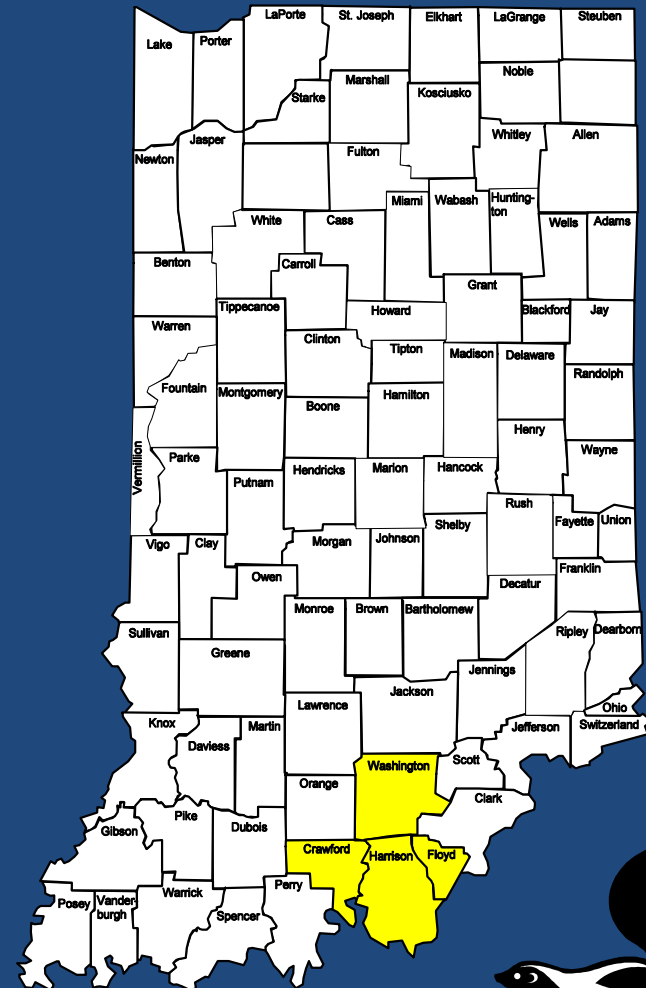
Year	Bat	Horse	Skunk	Human
2000	15			
2001	15			
2002	31	1	1	
2003	31			
2004	11		1	
2005	11			
2006	11			1
2007	13			
2008	11			
2009	39			1
2010	24			

Indiana Positive Bats

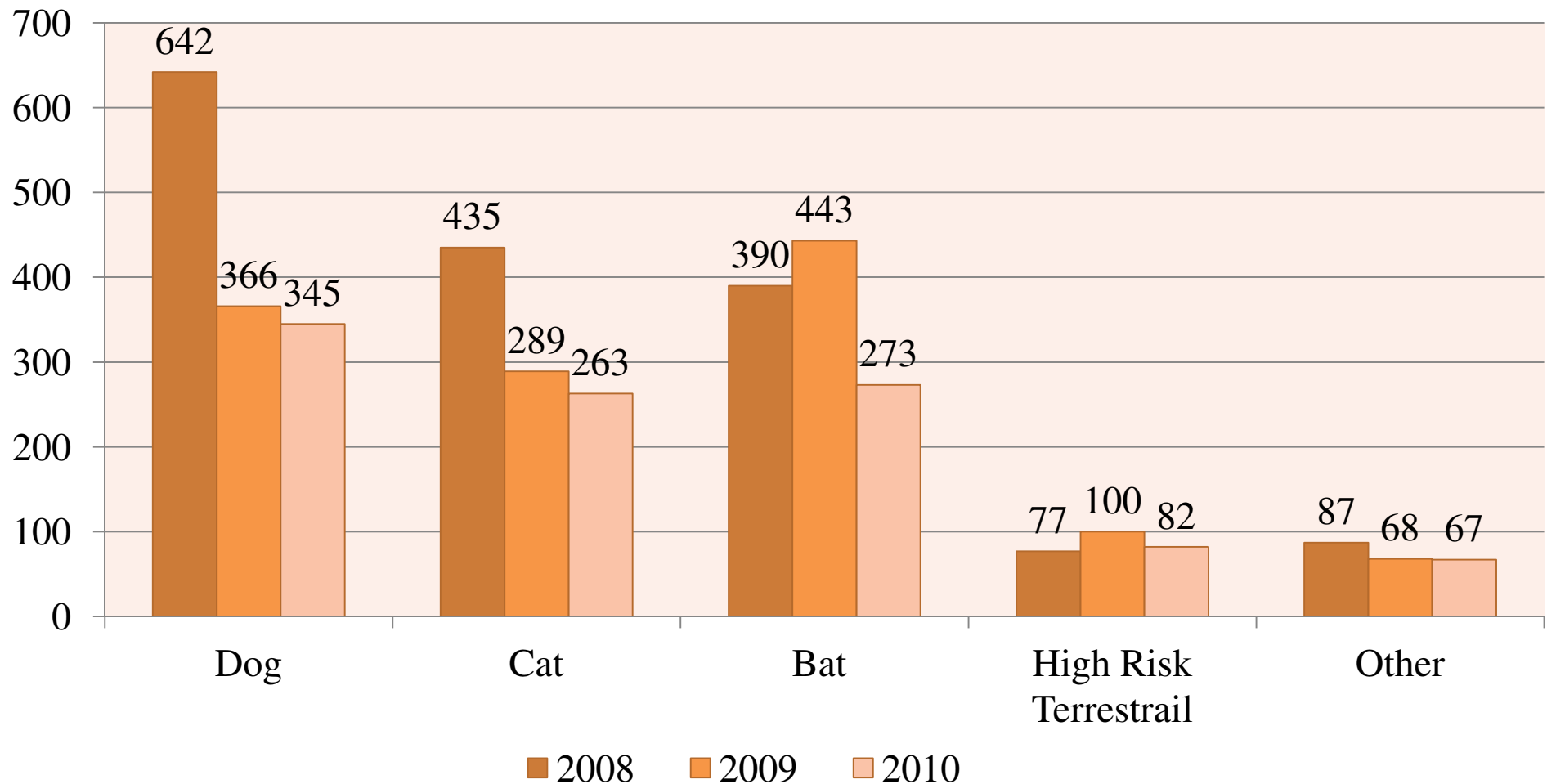


Skunks Rabies, 1990 - 2010

- 1996 – 1
- 1997 – 4
- 1998 – 1
- 2002 – 1
- 2004 – 1



Submissions -ISDH Rabies Lab



Last Rabies Positive Submission

Species	Year	Species	Year
Dog	1989	Cat	1984
Horse	2002	Skunk	2004
Fox	1990	Cow	1986
Pig	1967	Ground Hog	1983
Raccoon	1979	Bat	2011
Goat	1967	Mouse	1970
Opossum	1968	Human	2006, 2009

Human Rabies Cases (IN)

- Between 1900 and 1949 – 120 cases
- Between 1950 and 1959– 10 cases
- After 1959 – 2 cases
 - 2006
 - 2009



PUBLIC HEALTH AND RABIES PREVENTION IN HUMANS

Public Health Issues

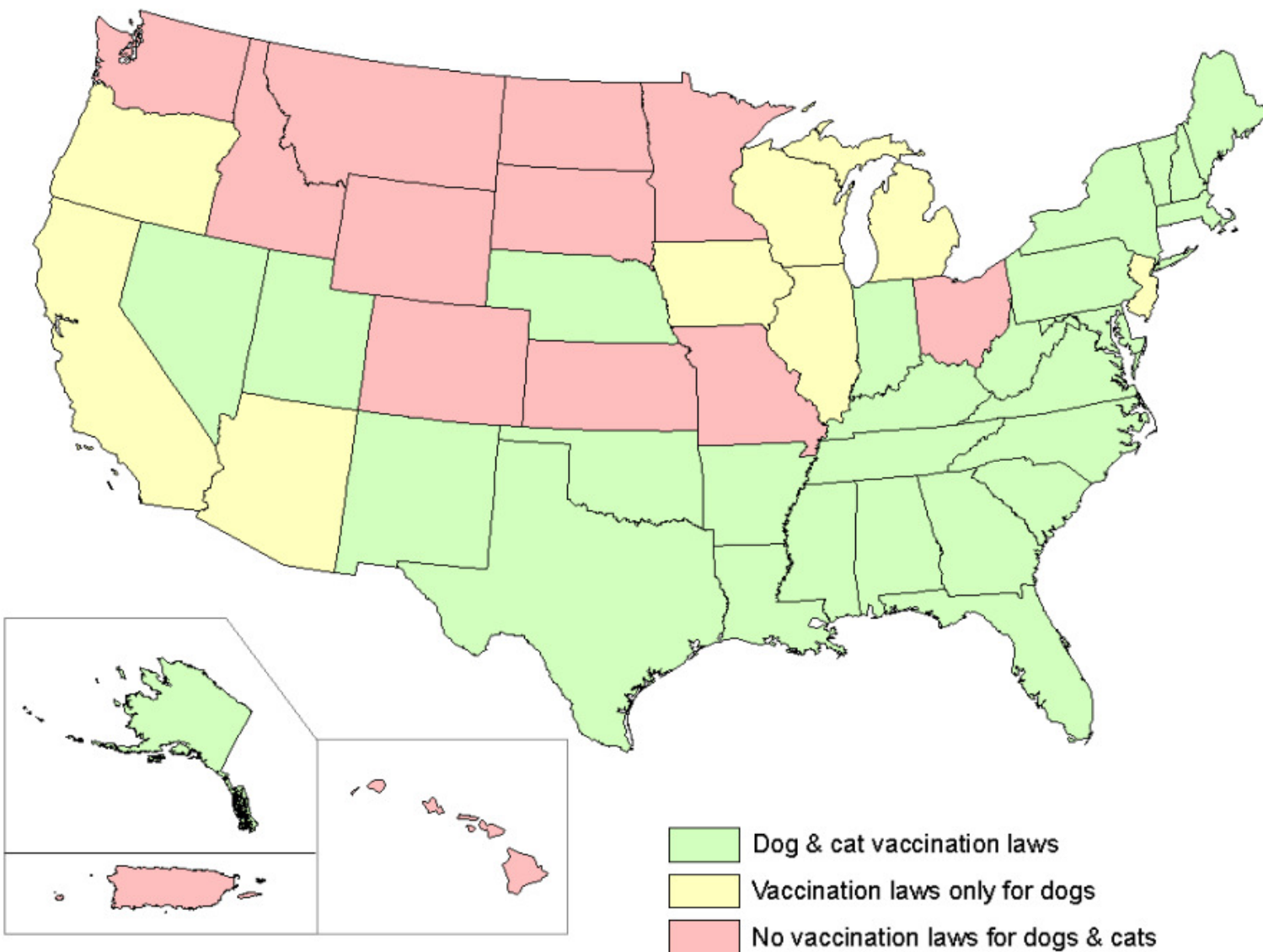
- Animal bites that potentially expose individuals to rabies
- Issues are:
 - Does the animal have rabies
 - Is post exposure prophylaxis needed

Laws and Regulations

- Management of Animal Bites to Humans
 - 410 IAC 1-2.3
- Animal bites; specific control measures
 - Section 52
- Authority: IC 16-41-2-1
Affected: IC 15-17-6-11; IC 16-41-2; IC 16-41-9

Quarantine Regulations

- 10 day bite Quarantine
- 6 month exposure Quarantine
- What is the difference?
- Why is there a difference?



Source: Centers for Disease Control and Prevention, November 2010

Risk of rabies transmission

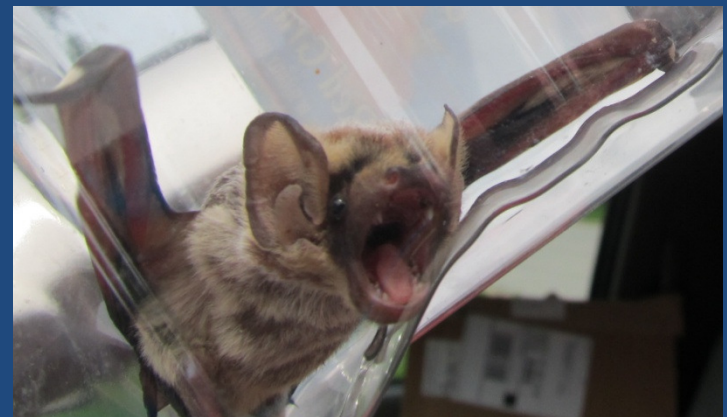
- Degree of exposure
- Circumstances of bite
- Behavior of biting animal
- Vaccination status
- Prevalence of rabies - geographic area
- SPECIES of animal involved

Summary, Rabies in Indiana

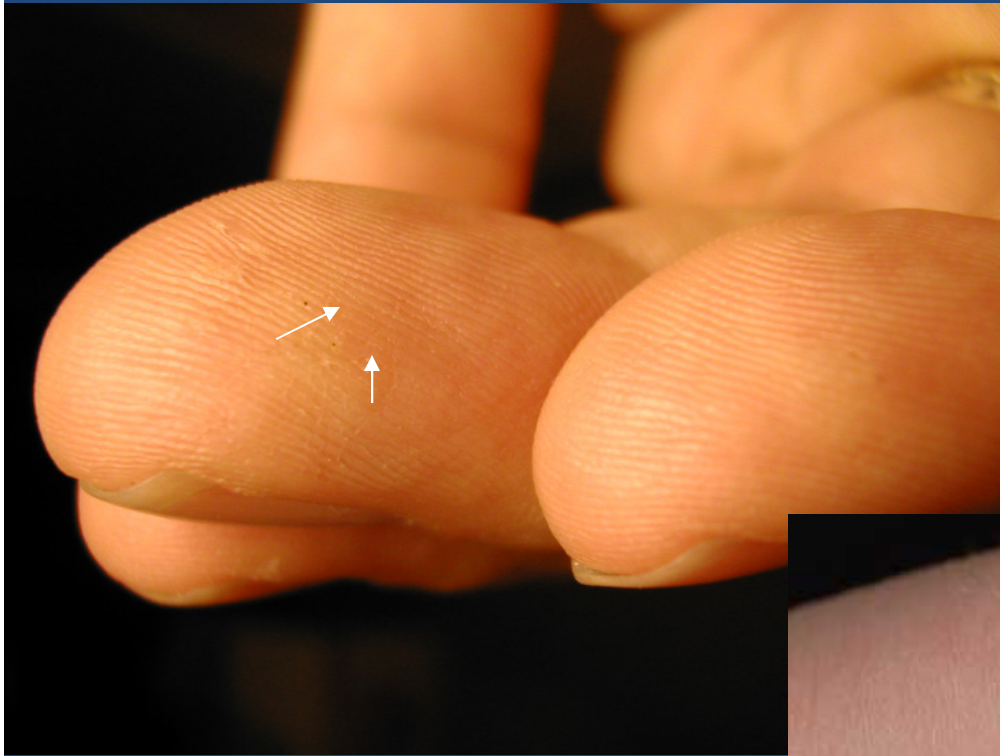
- Indiana's primary reservoir = ?
- Indiana's secondary reservoir = ?
- Rabies vaccination can prevent transmission from reservoirs
- Human exposures to bites/saliva from wildlife and domestic animals must continue to be evaluated

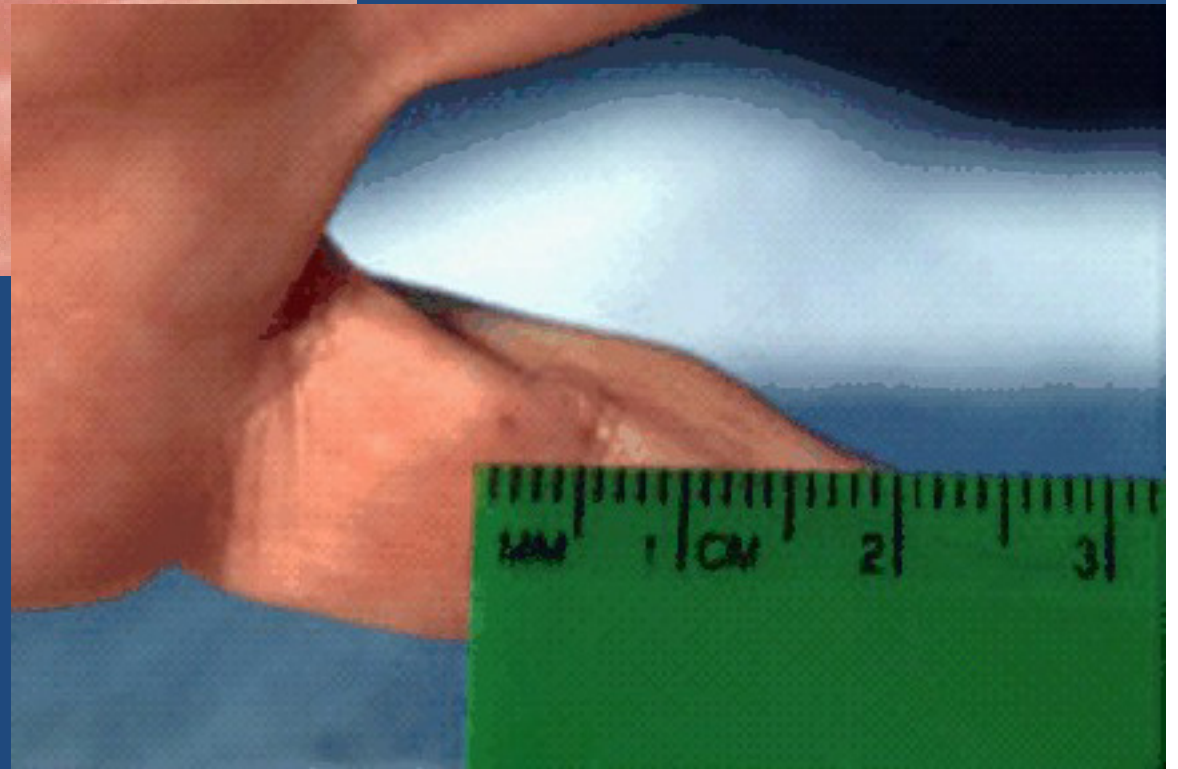
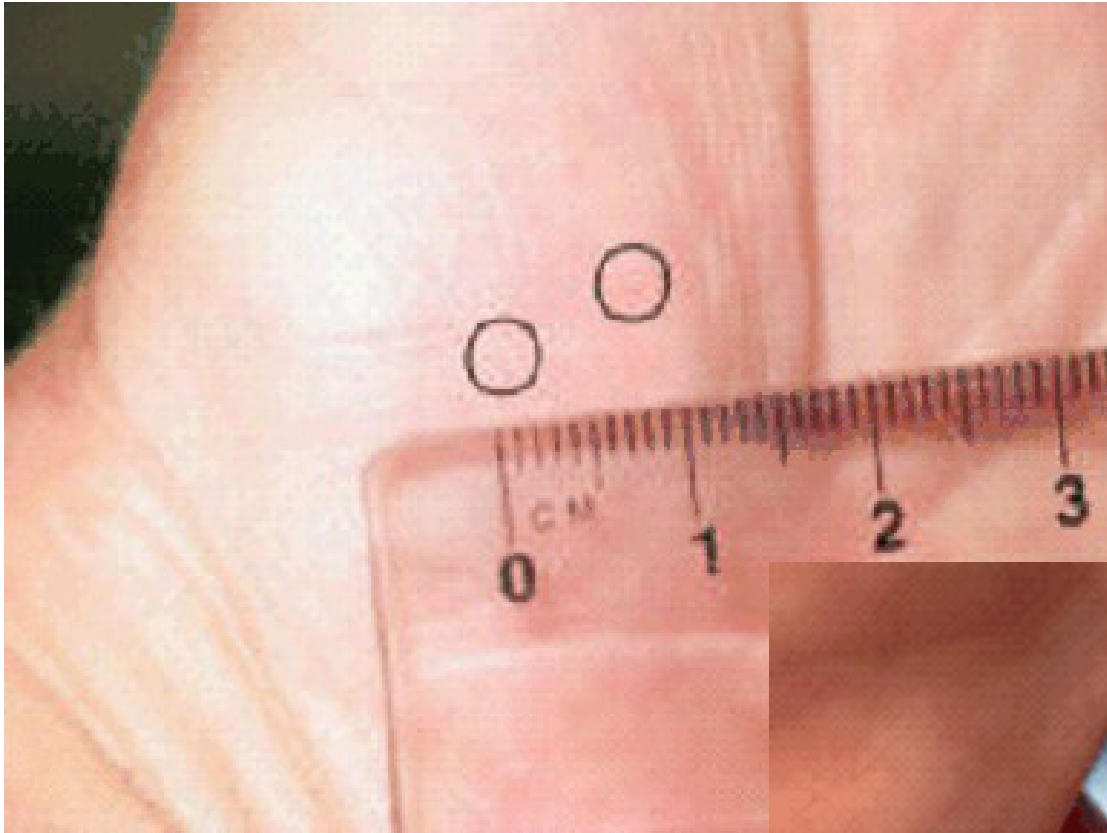
Bats and Rabies

- ~ 1% of bats carry rabies virus
- May or may NOT show symptoms
- Bites don't always leave visible marks
- Most exposure occur when bats enter human living quarters



- Photo: Green River Health District, KY





courtesy of Nebraska Department of Health and Human Services

More about Bat Exposure!

- Bat bites may not be noticed because bat teeth are very tiny and razor sharp.
- Examining a person for a bat bite is unreliable, because bat bites can be no bigger than a needle prick.
- *ANY direct contact with a bat should be considered a possible rabies exposure.*

Proximity Exposures



- Photo by Kevin Lilly

Bat Exclusion

<http://wildlifehotline.info/>



Home Identification & Control Find A Professional Wildlife Diseases Resources

General Removal

Hoosiers trying to cope with nuisance [Injured/Orphaned Animals](#) a broad range of information any time of the day, any day of the year on the Indiana Department of Natural Resources website. It can also be accessed by [clicking here](#).

The Nuisance Wildlife page provides specific information on the general characteristics, food habits, distribution, reproduction, prevention and control techniques, and disease threats of many species of mammals and birds, as well as general information about snakes.

Because of the large number of raccoons and other species that cause a nuisance for landowners throughout the state, the DNR is unable to provide assistance to actually help remove the animals. The DNR does offer some solutions and advice on how to try to prevent future problems and remove wild animals that have created a problem.

Acknowledgments

The information given herein is for educational purposes only. Reference to commercial products or trade names and service providers is made with the understanding that no discrimination is intended and no endorsement by State or Federal Agencies is implied. This program serves people of all ages regardless of socioeconomic level, race, color, sex, religion, disability, or national origin. The Wildlife Conflicts Information Website is a cooperative program of the United States Department of Agriculture – Animal and Plant Health Inspection Service – Wildlife Services, Indiana Department of Natural Resources–Division of Fish & Wildlife, and Purdue Cooperative Extension Service.

Current News

- What Do I Do If I Find a Dead Bird?
- Pesticide Update
- What Do I Do If I Find A Sick Or Dead Bat?
- List of 2010 Nuisance Waterfowl Control Operators (Removal) - PDF
- The Health Department is not testing dead birds this year
- Wildlife Health Event Reporting

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1-888-EXT-INFO

Sign In

When should you submit a bat for Rabies testing?

- Bite human or domestic pet
- Direct contact with human or pet
- Proximity exposures

- Photo: Green River Health District, KY



Low risk animals



- Not usually considered rabies exposures
- Treatment or testing is not normally necessary
- Evaluate for unusual circumstances that may indicate possible rabies

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